

REMARKS**Amended Claims**

Claims 1, 10-12, 17, 24-25, 29, 40, 48, and 53 are amended herein.

Mischaracterization of the References

As detailed below, Applicant maintains that the Present Application discloses and claims, a memory device driver that queries a memory device coupled to the system to identify the memory device and type and then configures itself to access the identified memory device in reference to a table of memory device type configurations. The table of memory device type configurations stores a plurality of table entries, each table entry detailing a driver configuration for a different memory device type. In addition, the table is compiled with the driver, is not stored on the memory device and is updatable without having to recompile the driver or application it is linked into. The table entries can also contain driver configuration settings for the data manager, and/or the file manager driver layers, in addition to the low level driver configuration.

Applicant respectfully notes that this memory driver and configuration method is quite different than that detailed in Robinson et al. and Kasa et al., which, as stated by the Examiner in the Office Action mailed on January 18, 2007, disclose a Flash memory device 27 with a common flash interface (CFI) and Query Mode ROM 31, which allows the memory device driver to query the Flash memory device through the CFI and read the device ID and driver configuration parameters from the Query Mode ROM of the Flash memory device. The driver of Robinson et al. and Kasa et al. is then configured from this data that had been retrieved from the Flash memory device through the CFI. Applicant further notes that, contrary to the Examiner's assertions, the Query Mode ROM is part of the Flash memory device of Robinson et al. and Kasa et al. and only stores configurations for the specific memory device it is a part of; no other entries for other memory device types are included in the Query Mode ROM.

Applicant also respectfully maintains that Robinson et al., while disclosing that the Query Mode ROM is programmed by the vendor/manufacture of the memory device (when the device is manufactured), does not disclose or suggest that the Query Mode ROM is modifiable to update

it for new memory device types different from itself (there would be no need for this as the Query Mode ROM contains the correct driver configuration parameters for the Flash memory device it is resident in and would not need to care about new memory device types that have become available).

See, Robinson et al., Figures 2-3; Abstract; column 5, lines 23-33; column 4, lines 16-67; column 8, line 36 to column 9, line 10; and Kasa et al., Figures 2, 10A and 10B, column 11, line 56 to column 14, line 15.

Applicant therefore respectfully contends that the CFI interface and Query Mode ROM of Robinson et al. does not disclose or suggest a table having a plurality of memory driver configuration entries, that the Query Mode ROM is stored separately from the Flash memory device, and that the memory device driver queries a memory device coupled to the system to identify it and configures itself to access the identified memory device in reference to the table.

Claim Objections

Claim 1 was objected to due to a minor informality. The Examiner noted that “[c]laim 1 recites limitation ‘wherein the table the table’ in line eight. Please correct the limitation by deleting one of the ‘the table’.” Applicant has amended claim 1 herein as suggested by the Examiner. Applicant contends that the correction of this typographical error does not constitute new matter and respectfully requests withdrawal of the objection to claim 1.

Claim Rejections Under 35 U.S.C. § 103

Claims 1-2, 5-12, 14-15, 17, 20-22, 24-25, 28-29, 32-40, 43-48 and 50 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Robinson et al. (U.S. Patent No. 6,279,069 B1) and further in view of Kasa et al. (U.S. Patent No. 6,275,412 B1) and Bill et al. (U.S. Patent No. 6,118,694) and Intel document AP-658 “Designing for Upgrade...”. Applicant respectfully traverses this rejection and submits that claims 1-2, 5-17, 20-22, 24-29, 32-40, 43-48 and 50-53, as amended, are allowable for at least the following reasons.

Applicant continues to respectfully maintain that Robinson et al. discloses a system that reads configuration parameters from a query mode ROM 31 of a Flash memory device and uses the configuration parameters to configure the low level driver to interface to the Flash memory

device. As stated above, Applicant respectfully maintains that Robinson et al. discloses a Flash memory device 27 with a common flash interface (CFI) and Query Mode ROM 31, which allows the memory device driver to query the Flash memory device through the CFI and read the device ID and driver configuration parameters from the Query Mode ROM of the Flash memory device. The driver of Robinson et al. is then configured from this data that had been retrieved from the Flash memory device through the CFI. Applicant further notes that, contrary to the Examiner's assertions, the Query Mode ROM is part of the Flash memory device of Robinson et al. and only stores configurations for the specific memory device it is a part of; no other entries for other memory device types are included in the Query Mode ROM. Applicant therefore continues to respectfully maintain that Robinson et al. does not teach or suggest reading a device ID and/or manufacturer code to discover the memory type and configuring a device driver based on the discovered memory type by matching the discovered memory type to an entry in a table of memory device driver configurations and loading parameters from the table entry that matches the discovered memory type, wherein the table is not stored on the memory device and is modifiable to update the entries of memory types and parameters. *See, e.g.,* Robinson et al., Figures 2-3; Abstract; column 5, lines 23-33; column 4, lines 16-67; column 8, line 36 to column 9, line 10. Applicant thus respectfully submits that Robinson et al. does not teach or suggest all elements of Applicant's claimed invention.

In addition, Applicant continues to respectfully maintain that Kasa et al. discloses an alterable Common Flash Interface for a Flash memory which stores Flash memory interface configuration data in a special data area of the Flash memory and incorporates a 16 bit identification code to allow a user to identify the manufacturer and operating parameters of the device. *See, e.g.,* Kasa et al., Figures 2, 10A and 10B, Abstract; column 11, line 56 to column 14, line 15.

Applicant further respectfully maintains that Bill et al. discloses a distributed Common Flash Interface decoder for a Flash memory. *See, e.g.,* Bill et al., Figures 1-3, Abstract; column 2, line 21 to column 3, line 46. Applicant also respectfully maintains that Intel document AP-658 "Designing for Upgrade...", also discloses a CFI interface. *See, e.g.,* and Intel document AP-658 "Designing for Upgrade...", Published December 1998, Page 7, Item 2.5.

Applicant therefore respectfully maintains that neither Kasa et al. or Bill et al. or Intel document AP-658 “Designing for Upgrade...” teach or suggest discovering the memory type and configuring a device driver based on the discovered memory type by matching the discovered memory type to an entry in a table of memory driver configurations and loading parameters from the table entry that matches the discovered memory type, wherein the table the table is not stored on the memory device and is modifiable to update the entries of memory types and parameters.

Applicant thus respectfully submits that combining Robinson et al. with Kasa et al. or Bill et al. or Intel document AP-658 “Designing for Upgrade...” does not teach or suggest Applicant’s claimed invention, as maintained by the Examiner. Applicant therefore respectfully contends that Robinson et al. and Kasa et al., or Robinson et al. and Bill et al., or Robinson et al. and Intel document AP-658 “Designing for Upgrade...” do not teach or suggest all elements of Applicant’s claims 1, 17, 29, 40 and 48, either alone or in combination.

Applicant’s claim 1, as amended, recites, “[a] method of operating a memory device driver comprising: querying at least one memory device to discover the memory type by reading a memory ID code stored in the memory device; and configuring the driver to access the at least one memory device according to the discovered memory type by matching the discovered memory type to an entry in a memory type data table and loading parameters from the table entry that matches the discovered memory type, wherein the memory type data table contains a plurality of table entries, each table entry corresponding to a different memory type, and where the table is compiled with the memory device driver; wherein the table is not stored on the at least one memory device and is modifiable to update the entries of memory types and parameters without requiring recompilation.” As detailed above, Applicant submits that combining Robinson et al. with Kasa et al. or Bill et al. or Intel document AP-658 “Designing for Upgrade...” fails to teach or suggest such a method of operating a memory device driver by querying a memory device to read a device ID and configuring the device driver to access the memory device according to the device ID by matching the discovered memory type to an entry in a table and loading parameters from the table entry that matches the discovered memory type, wherein the table the table is not stored on the memory device and is modifiable to update the entries of memory types and parameters, either alone or in combination. As such, Robinson et

al. and Kasa et al. or Bill et al. or Intel document AP-658 “Designing for Upgrade...” fail to teach or suggest all elements of independent claim 1.

Applicant’s claim 17, as amended, recites, “[a] method of operating a system comprising: querying at least one Flash memory device coupled to a host to discover the memory type by reading a device ID and/or manufacturer code stored in the Flash memory device; and configuring a driver routine executing on the host to access the at least one Flash memory device according to the discovered memory type by loading parameters from an entry in a memory type data table that matches the discovered memory type, wherein the memory type data table contains a plurality of table entries, each table entry corresponding to a different memory type, and where the table is compiled with the memory device driver; wherein the table is not stored on the at least one Flash memory device and is modifiable to update the entries of memory types and parameters.” As detailed above, Applicant submits combining Robinson et al. with Kasa et al. or Bill et al. or Intel document AP-658 “Designing for Upgrade...” fails to teach or suggest such a method of operating a system, either alone or in combination. As such, Robinson et al. and Kasa et al. or Bill et al. or Intel document AP-658 “Designing for Upgrade...” fail to teach or suggest all elements of independent claim 17.

Applicant’s claim 29, as amended, recites, “[a] method of configuring a driver comprising: querying at least one Flash memory device to discover the memory type; and configuring the driver to access the at least one memory device according to the discovered memory type by matching the discovered memory type to an entry in a memory type data table and loading parameters from the table entry that matches the discovered memory type, wherein the memory type data table contains a plurality of table entries, each table entry corresponding to a different memory type, and where the table is compiled with the memory device driver; wherein the table is not stored on the at least one Flash memory device and where the table is updateable.” As detailed above, Applicant submits combining Robinson et al. with Kasa et al. or Bill et al. or Intel document AP-658 “Designing for Upgrade...” fails to teach or suggest such a method of configuring a driver, either alone or in combination. As such, Robinson et al. and Kasa et al. or Bill et al. or Intel document AP-658 “Designing for Upgrade...” fail to teach or suggest all elements of independent claim 29.

Applicant's claim 40, as amended, recites, "[a] system comprising: at least one Flash memory device; and a host coupled to the at least one Flash memory device, wherein the host is adapted to query the at least one Flash memory device to read a device ID and/or manufacturer code stored in the Flash memory device and configure a driver routine to access the at least one Flash memory device in response to the query by matching the discovered device ID and/or manufacturer code to an entry in a memory type data table and loading parameters from the memory type data table entry that matches the device ID and/or manufacturer code; wherein the memory type data table contains a plurality of memory type data table entries, each table entry corresponding to a different memory type; and wherein the table is not stored on the at least one Flash memory device and is modifiable to update the entries." As detailed above, Applicant submits combining Robinson et al. with Kasa et al. or Bill et al. or Intel document AP-658 "Designing for Upgrade..." fails to teach or suggest such a system that queries a Flash memory device to read a device ID and/or manufacturer code stored in the Flash memory device and configures a driver routine to access the at least one Flash memory device in response to the query by matching the discovered device ID and/or manufacturer code to an entry in a table, wherein the table is not stored on the at least one Flash memory device and is modifiable to update the entries, either alone or in combination. As such, Robinson et al. and Kasa et al. or Bill et al. or Intel document AP-658 "Designing for Upgrade..." fail to teach or suggest all elements of independent claim 40.

Applicant's claim 48, as amended, recites, "[a] machine-usable medium, the machine-usable medium containing a software routine for causing a processor to execute a method, wherein the method comprises: querying at least one Flash memory device to read a device ID and/or manufacturer code stored in the Flash memory device to discover the memory type; and configuring a driver to access the at least one Flash memory device according to the discovered memory type by matching the discovered device ID and/or manufacturer code to an entry in a memory type data table and loading parameters from the memory type data table entry that matches the device ID and/or manufacturer code; wherein the memory type data table contains a plurality of memory type data table entries, each table entry corresponding to a different memory type; and wherein the table is not stored on the at least one Flash memory device and is modifiable to update the entries." As detailed above, Applicant submits combining Robinson et

al. with Kasa et al. or Bill et al. or Intel document AP-658 “Designing for Upgrade...” fails to teach or suggest such a machine-usable medium and process, either alone or in combination. As such, Robinson et al. and Kasa et al. or Bill et al. or Intel document AP-658 “Designing for Upgrade...” fail to teach or suggest all elements of independent claim 48.

Applicant’s claim 53, as amended, recites, in part, “[a] system comprising: at least one Flash memory device; and a host coupled to the at least one Flash memory device, wherein the host comprises a means for detecting a Flash memory type of the at least one Flash memory device by reading a memory ID code stored in the Flash memory device and comprises a means for configuring a driver to access the at least one Flash memory device in response to the Flash memory type detected by the means for detecting by matching the memory ID code to an entry in a memory type configuration data storage means and loading parameters from the entry; wherein the memory type configuration data storage means contains plurality of memory type driver configuration data entries, each entry corresponding to a different memory type; and wherein the memory type configuration data storage means is not stored on the at least one Flash memory device and is modifiable to update the entries.” As detailed above, Applicant submits combining Robinson et al. with Kasa et al. or Bill et al. fails to teach or suggest such a system, either alone or in combination. As such, Robinson et al. and Kasa et al. or Bill et al. or Intel document AP-658 “Designing for Upgrade...” fail to teach or suggest all elements of independent claim 53.

Applicant respectfully contends that claims 1, 17, 29, 40, 48, and 53 as pending have been shown to be patentably distinct from the cited reference of Robinson et al., Kasa et al., Bill et al., and Intel document AP-658 “Designing for Upgrade...”, either alone or in combination. As claims 2, 5-16, 20-22, 24-29, 32-39, 43-47, and 50-52 depend from and further define claims 1, 17, 29, 40, and 48, respectively, they are also believed to be allowable. Accordingly, Applicant respectfully requests reconsideration and withdrawal of the rejection under 35 U.S.C. § 103(a) and allowance of claims 1-2, 5-17, 20-22, 24-29, 32-40, 43-48 and 50-53.

Claims 4, 23 and 34 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Robinson et al. and Kasa et al. as applied to claims 1-2 above and further in view of Langford et

al. (U.S. Patent No. 6,907,496). Applicant respectfully traverses this rejection and feels that claims 4, 23 and 34 are allowable for the following reasons.

Applicant respectfully maintains, as stated above, that Robinson et al. discloses a system that reads configuration parameters from a query mode ROM 31 of a Flash memory device and uses the configuration parameters to configure the low level driver to interface to the Flash memory device. *See, e.g.*, Robinson et al., Abstract; column 5, lines 23-33; and column 4, lines 16-67. As also stated above, Applicant continues to respectfully maintain that Kasa et al. discloses an alterable Common Flash Interface for a Flash memory which stores Flash memory interface configuration data in a special data area of the Flash memory and incorporates a 16 bit identification code to allow a user to identify the manufacturer and operating parameters of the device. *See, e.g.*, Kasa et al., Figures 10A and 10B, Abstract; column 11, line 56 to column 12, line 65. Applicant respectfully maintains that Robinson et al. and Kasa et al. do not teach or suggest discovering the memory type and configuring a device driver based on the discovered memory type by matching the discovered memory type to an entry in a table and loading parameters from the table entry that matches the discovered memory type, wherein the table the table is not stored on the memory device and is modifiable to update the entries of memory types and parameters, either alone or in combination.

In addition, Applicant respectfully continues to maintain that Langford et al. discloses a method of updating the data on a flash memory that determines the configuration and size of a Flash memory for use in updating the flash memory by reading addresses of the Flash memory system. *See, e.g.*, Langford et al., Figure 4, Abstract; column 2, lines 6-11; column 3, line 41 to column 5, line 17.

Applicant thus respectfully submits that combining Robinson et al. and Kasa et al. with Langford et al. does not teach or suggest Applicant's claimed invention, as maintained by the Examiner. Applicant therefore respectfully contends that Robinson et al., Kasa et al. and Langford et al. do not teach or suggest all elements of Applicant's claims 1, 17, and 29, either alone or in combination.

Applicant respectfully contends that claims 1, 17, and 29 as pending have been shown to be patentably distinct from the cited references Robinson et al. and Langford et al., either alone or in combination. As claims 4, 23 and 34 depend from and further define claims 1, 17, and 29,

respectively, they are also believed to be allowable. Accordingly, Applicant respectfully requests reconsideration and withdrawal of the rejection under 35 U.S.C. § 103(a) and allowance of claims 4, 23 and 34.

Claims 3, 18, 30 and 41 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Robinson et al. and further in view of Wong et al. (U.S. Patent No. 6,970,969). Claims 19, 31, 42 and 49 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Robinson et al. and further in view of Parulski et al. (U.S. Patent No. 6,650,366) and Battaglia et al. (U.S. Patent No. 6,987,927). Applicant respectfully traverses this rejection and feels that claims 3, 18-19, 30-31, 41-42 and 49 are allowable for the following reasons.

Applicant respectfully maintains, as stated above, that Robinson et al. discloses a system that reads configuration parameters from a query mode ROM 31 of a Flash memory device and uses the configuration parameters to configure the low level driver to interface to the Flash memory device. *See, e.g.*, Robinson et al., Abstract; column 5, lines 23-33; and column 4, lines 16-67. Applicant respectfully maintains that Robinson et al. does not teach or suggest discovering the memory type and configuring a device driver based on the discovered memory type by matching the discovered memory type to an entry in a table and loading parameters from the table entry that matches the discovered memory type, wherein the table the table is not stored on the memory device and is modifiable to update the entries of memory types and parameters. *See, e.g.*, Robinson et al., Abstract; column 5, lines 23-33; and column 4, lines 16-67. Applicant therefore respectfully submits that Robinson et al. does not teach or suggest a method of operating a memory device driver comprising querying at least one memory device to discover the memory type, and configuring the driver to access the at least one memory device according to the discovered memory type by matching the discovered memory type to an entry in a table and loading parameters from the table entry that matches the discovered memory type, wherein the table the table is not stored on the memory device and is modifiable to update the entries of memory types and parameters. Applicant thus respectfully submits that Robinson et al. does not teach or suggest all elements of Applicant's claimed invention.

In addition, Applicant respectfully maintains that Wong et al. discloses a multiple segment data structure and method to manage data in NAND and NOR architecture Flash memory device. *See, e.g.*, Wong et al., Abstract; column 8, lines 6-11.

Applicant also respectfully maintains that Parulski et al. discloses a digital still imaging system incorporates a PCMCIA-ATA interface. *See, e.g.*, Parulski et al., Abstract; column 4, lines 30-35.

Applicant further respectfully maintains that Battaglia et al. discloses a portable battery powered device for transferring data from a flash device to a large capacity digital storage device that incorporates a USB, MemoryStick, and Multimedia card interfaces. *See, e.g.*, Battaglia et al., Abstract; column 16, lines 4-11; column 15, lines 2-6.

Applicant thus respectfully submits that combining Robinson et al. with Wong et al., Parulski et al, or Battaglia et al. does not teach or suggest Applicant's claimed invention, as maintained by the Examiner. Applicant therefore respectfully contends that Robinson et al. and Wong et al., Parulski et al, or Battaglia et al. do not teach or suggest all elements of Applicant's claims 1, 17, 29, 40 and 48, either alone or in combination.

Applicant respectfully contends that claims 1, 17, 29, 40 and 48, as pending have been shown to be patentably distinct from the cited references Robinson et al., Wong et al., Parulski et al, or Battaglia et al., either alone or in combination. As claims 3, 18-19, 30-31, 41-42 and 49 depend from and further define claims 1, 17, 29, 40 and 48, respectively, they are also believed to be allowable. Accordingly, Applicant respectfully requests reconsideration and withdrawal of the rejection under 35 U.S.C. § 103(a) and allowance of claims 3, 18-19, 30-31, 41-42 and 49.

Claims 1-2, 4, 6-7, 17, 20, 21, 23, 29, 32, 34, 40, 44, 47, 48 and 50-51 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Robinson et al. and further in view of Larsen et al. (U.S. Patent No. 6,223,290 B1). Applicant respectfully traverses this rejection and feels that claims 1-2, 4, 6-7, 17, 20, 21, 23, 29, 32, 34, 40, 44, 47, 48 and 50-51 are allowable for the following reasons.

Applicant respectfully maintains, as stated above, that Robinson et al. discloses a system that reads configuration parameters from a query mode ROM 31 of a Flash memory device and uses the configuration parameters to configure the low level driver to interface to the Flash

memory device. *See, e.g.,* Robinson et al., Abstract; column 5, lines 23-33; and column 4, lines 16-67. Applicant respectfully maintains that Robinson et al. does not teach or suggest discovering the memory type and configuring a device driver based on the discovered memory type by matching the discovered memory type to an entry in a table and loading parameters from the table entry that matches the discovered memory type, wherein the table the table is not stored on the memory device and is modifiable to update the entries of memory types and parameters. *See, e.g.,* Robinson et al., Abstract; column 5, lines 23-33; and column 4, lines 16-67. Applicant therefore respectfully submits that Robinson et al. does not teach or suggest a method of operating a memory device driver comprising querying at least one memory device to discover the memory type, and configuring the driver to access the at least one memory device according to the discovered memory type by matching the discovered memory type to an entry in a table and loading parameters from the table entry that matches the discovered memory type, wherein the table the table is not stored on the memory device and is modifiable to update the entries of memory types and parameters. Applicant thus respectfully submits that Robinson et al. does not teach or suggest all elements of Applicant's claimed invention.

In addition, Applicant respectfully maintains that Larsen et al. discloses a method for controlling use of an electronic system having a lockable auxiliary memory, such as a protection register or one-time-programmable (OTP) memory, outside of the main memory that contains a unique code that is compared in a relationship to at least one component code to determine if the system is allowed to be used. *See, e.g.,* Larsen et al., Abstract; column 5, line 3 to column 6, line 9. Applicant therefore respectfully submits that Larsen et al. also does not teach or suggest a method of operating a memory device driver comprising querying at least one memory device to discover the memory type, and configuring the driver to access the at least one memory device according to the discovered memory type by matching the discovered memory type to an entry in a table and loading parameters from the table entry that matches the discovered memory type, wherein the table the table is not stored on the memory device and is modifiable to update the entries of memory types and parameters. Applicant therefore respectfully contends that combining Robinson et al. and Larsen et al. does not teach or suggest all elements of Applicant's claims 1, 17, 29, 40 and 48, either alone or in combination.

Applicant respectfully contends that claims 1, 17, 29, 40 and 48, as pending have been shown to be patentably distinct from the cited references Robinson et al. and Larsen et al., either alone or in combination. As claims 2, 4, 6-7, 20-21, 23, 32, 34, 44, 47 and 50-51 depend from and further define claims 1, 17, 29, 40 and 48, respectively, they are also believed to be allowable. Accordingly, Applicant respectfully requests reconsideration and withdrawal of the rejection under 35 U.S.C. § 103(a) and allowance of claims 1-2, 4, 6-7, 17, 20, 21, 23, 29, 32, 34, 40, 44, 47, 48 and 50-51.


CONCLUSION

In view of the above remarks, Applicant believes that all pending claims are in condition for allowance and respectfully requests a Notice of Allowance be issued in this case. Please charge any further fees deemed necessary or credit any overpayment to Deposit Account No. 501373.

If the Examiner has any questions or concerns regarding this application, please contact the undersigned at (612) 312-2207.

Respectfully submitted,

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